

Claims:

1. A method of managing a telecommunications network including a network management system (NMS) client, an NMS server and a network device, comprising:
  - 5     storing an identifier corresponding to a network device managed object in a first memory, wherein the first memory is local to the NMS client;
  - sending a data request associated with the managed object and including the identifier from the NMS client to the NMS server;
  - gathering data in response to the data request through the NMS server using the identifier; and
  - 10     sending the gathered data from the NMS server to the NMS client.
2. The method of claim 1, wherein gathering data comprises:
  - 15     searching a second memory for the identifier, wherein the second memory is local to the NMS server.
3. The method of claim 2, wherein if the identifier is not found in the second memory, the method further comprises:
  - 20     locating data corresponding to the identifier within the network device; and
  - retrieving the located data from the network device.     }
4. The method of claim 3, wherein the located data is maintained in a relational database and wherein the identifier is used as a primary key.
- 25     5. The method of claim 1, wherein gathering data comprises:
  - locating data corresponding to the identifier within the network device; and
  - retrieving the located data from the network device.
6. The method of claim 5, wherein the located data is maintained in a relational database and wherein the identifier is used as a primary key.

7. The method of claim 1, wherein the managed object corresponds to a physical component in the network device.

8. The method of claim 1, wherein the managed object corresponds to a logical component in the network device.

5 9. The method of claim 1, further comprising:  
using the gathered data to update a graphical user interface (GUI).

10 10. A method of managing a telecommunications network, comprising:  
retrieving data for a plurality of managed objects from a network device through a network management system (NMS) server, wherein the data includes identifiers corresponding to each managed object;  
creating a plurality of managed objects using the retrieved data, wherein each managed object includes one of the corresponding identifiers;  
15 creating a proxy for each managed object, wherein each proxy includes the identifier from the managed object; and  
storing the proxies in memory, wherein the memory is local to an NMS client.

20 11. The method of claim 10, further comprising:  
using data within the proxies to update a graphical user interface (GUI).

12. The method of claim 10, wherein the managed objects are physical managed objects.

25 13. The method of claim 10, wherein the managed objects are logical managed objects.

14. The method of claim 10, wherein prior to retrieving data from a network device, the method comprises:  
30 detecting a user selection of the network device through the NMS client.

15. The method of claim 10, wherein the memory is a first memory and wherein the method further comprises:  
storing the managed objects in a second memory local to the NMS server.

5 16. The method of claim 10, wherein creating a proxy for each managed object comprises:  
issuing a get proxy function call to each managed object.

17. The method of claim 10, further comprising:

10 using data within the proxies to update at least one GUI table;  
detecting a user request through a GUI corresponding to the retrieved data; and  
updating the GUI display using data within the GUI table in accordance with the user request.

15 18. The method of claim 10, further comprising:  
detecting a user request through a GUI corresponding to at least one logical managed object of the network device;  
issuing a function call to one of the proxies;  
sending signals from the NMS client to the NMS server including the identifier  
20 from the proxy;  
retrieving data corresponding to the at least one logical managed object from the network device through the NMS server, wherein the retrieved logical data includes a logical identifier corresponding to the at least one logical managed object; and  
sending the retrieved logical data from the NMS server to the NMS client.

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19. The method of claim 18, wherein the memory is a first memory and wherein  
after sending signals from the NMS client to the NMS server, the method  
further comprises:  
searching a second memory for a managed object including the identifier from  
30 the proxy, wherein the second memory is local to the NMS server.

20. The method of claim 18, wherein issuing a function call to one of the proxies comprises:

issuing a function call to a port proxy.

5    21. The method of claim 18, wherein issuing a function call to one of the plurality of proxies comprises:

issuing a function call to a logical network protocol node proxy.

10    22. The method of claim 18, wherein detecting a user request comprises:

detecting a user selection of a GUI tab including one or more logical components in the network device;

wherein sending the retrieved logical data from the NMS server to the NMS client comprises:

formatting the data, including the logical identifier, into a structure used by the

15    selected GUI tab; and

wherein the method further comprises:

receiving the formatted data at the NMS client; and

updating the selected GUI tab using the received formatted data.

20    23. The method of claim 18, wherein detecting a user request comprises:

detecting a user selection of within a device mimic corresponding to one or more logical components in the network device;

wherein sending the retrieved logical data from the NMS server to the NMS client comprises:

formatting the data, including the logical identifier, into a structure used by a

25    GUI tab corresponding to the selection within the device mimic; and

wherein the method further comprises:

receiving the formatted data at the NMS client; and

updating the GUI tab using the received formatted data.

30    24. The method of claim 18, wherein detecting a user request comprises:

detecting a user selection within a device mimic corresponding to a logical managed object in the network device;

wherein the signals sent from the NMS client to the NMS server further include the logical identifier corresponding to the selected logical managed object;

5 wherein retrieving data corresponding to the at least one logical managed object from the network device further includes locating data corresponding to the at least one logical managed object within the network device using the corresponding logical identifier;

wherein the method further comprises:

10 opening a GUI dialog;

wherein sending the retrieved logical data from the NMS server to the NMS client comprises:

building a configuration object at the NMS server; and

sending the configuration object from the NMS server to the NMS client; and

15 wherein the method further comprises:

receiving the configuration object at the NMS client; and

updating the GUI dialog using the received configuration object.

25. The method of claim 18, wherein detecting a user request comprises:

20 detecting a user selection of an entry in a GUI tab corresponding to a logical managed object in the network device;

wherein the signals sent from the NMS client to the NMS server further include the logical identifier corresponding to the selected logical managed object;

wherein retrieving data corresponding to the at least one logical managed object

25 from the network device further includes locating data corresponding to the at least one logical managed object within the network device using the corresponding logical identifier;

wherein the method further comprises:

opening a GUI dialog;

30 wherein sending the retrieved logical data from the NMS server to the NMS client comprises:

building a configuration object at the NMS server; and

sending the configuration object from the NMS server to the NMS client; and  
wherein the method further comprises:  
receiving the configuration object at the NMS client; and  
updating the GUI dialog using the received configuration object.

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26. The method of claim 25, further comprising:  
detecting a user change within the GUI dialog;  
issuing a function call to the one of the plurality of proxies;  
sending signals from the NMS client to the NMS server including the identifier  
10 from the proxy and the logical identifier corresponding to the selected logical  
managed object;  
locating data within the network device corresponding to the selected logical  
managed object using the logical identifier; and  
changing the located data within the network device in accordance with the user  
15 change.

27. The method of claim 26, further comprising:  
receiving a notice from the network device at the NMS server that network  
device data corresponding to the logical component has been changed, wherein the  
20 notice includes a copy of the changed data and the logical identifier;  
formatting the changed data, including the logical identifier, into a structure used  
by the corresponding GUI tab; and  
wherein the method further comprises:  
receiving the formatted changed data at the NMS client; and  
25 updating the selected GUI tab using the received formatted changed data.

28. The method of claim 18, wherein sending signals from the NMS client to the  
NMS server comprises:  
sending JAVA RMI messages from the NMS client to the NMS server.

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29. The method of claim 18, wherein the user request comprises a request to  
configure the logical component.

30. The method of claim 18, wherein the user request comprises a request to delete the logical component.

5 31. The method of claim 18, wherein the user request comprises a request to view multiple logical components.

32. The method of claim 18, wherein the user request comprises a request to modify a configured logical component.

10 33. The method of claim 14, wherein the network device is a first network device, the plurality of managed objects is a first plurality of managed objects and the proxies are a first plurality of proxies and wherein the method further comprises:

15 detecting a user selection of a second network device through the NMS client; retrieving data for a second plurality of managed objects from the second network device through the NMS server, wherein the data includes identifiers corresponding to each of the second plurality of managed objects; creating a second plurality of managed objects using the retrieved data, wherein each of the second plurality of managed objects includes one of the corresponding identifiers;

20 creating a second proxy for each of the second plurality of managed objects, wherein each of the second plurality of proxies includes the corresponding identifier from the managed object; and

25 storing the second plurality of proxies in the memory local to the NMS client.

34. The method of claim 10, wherein the NMS client is a first NMS client and wherein the method further comprises:

detecting a user selection of the network device through a second NMS client; and

30 storing the proxies in a second memory, wherein the second memory is local to the second NMS client.

35. The method of claim 12, further comprising:

receiving a notice from the network device at the NMS server that network device data corresponding to at least one of the plurality of physical managed objects has been changed, wherein the notice comprises a copy of the changed data including identifiers corresponding to each physical managed object;

5 creating a plurality of new physical managed objects using the changed network device physical data, wherein each new physical managed object includes the corresponding identifier;

creating a plurality of new physical proxies for the plurality of new physical managed objects, wherein each proxy includes the corresponding identifier; and

10 storing the plurality of new physical proxies in the memory local to the NMS client.

36. The method of claim 10, further comprising:

15 detecting configuration of a network protocol service within the network device;

creating a logical managed object through the NMS server corresponding to a network protocol node, wherein the logical managed object includes an assigned logical identifier;

20 creating a logical proxy through a function call in the logical managed object, wherein the logical proxy includes the assigned logical identifier; and

storing the logical proxy in the memory local to the NMS client.

37. The method of claim 36, further comprising:

detecting a user request through a GUI corresponding to the network protocol service;

25 issuing a function call to the logical proxy in response to the user request; and sending signals from the NMS client to the NMS server to implement the user request, wherein the signals include the assigned logical identifier.

30 38. The method of claim 37, wherein the network protocol service comprises an upper layer network protocol service.

39. The method of claim 37, wherein the network protocol service comprises a physical layer network protocol service.